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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,165	11/22/2006	Akito Tanaka	43512-104208	6607

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EXAMINER	
HAQ, SHAFIQUL	

ART UNIT	PAPER NUMBER
1641	

NOTIFICATION DATE	DELIVERY MODE
12/07/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Patent-ch@btlaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/573,165	TANAKA ET AL.	
	Examiner	Art Unit	
	SHAFIQUL HAQ	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-17 and 20-47* is/are pending in the application.

4a) Of the above claim(s) *4-8 and 13-47* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 9 -12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/30/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 3 and 9-12 are examined on merits. See office action of 4/30/09 for withdrawal of claims 4-8 and 13-47 as being directed to non-elected inventions.

Rejections Withdrawn

2. Applicant's arguments, see p17-18, filed on September 14, 2009, with respect to the rejections under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The rejection of claims 1, 3 and 9-12 under 35 U.S.C. 112, second paragraph has been withdrawn in view of amended claim 1 in the reply filed on September 14, 2009.

3. Applicant's arguments, see pp18, filed on September 14, 2009, with respect to the rejection under 35 U.S.C. 102(b) as being anticipated by Song *et al* (Journal of Applied Polymer Sciences 1996) have been fully considered and are persuasive. The rejection of claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by Song *et al* has been withdrawn in light of amended claim 1 in the reply filed on September 14, 2009.

4. Applicant's arguments, see pp18, filed on September 14, 2009, with respect to the rejection under 35 U.S.C. 102(b) as being anticipated by Cook *et al* (Journal of Applied Polymer Sciences 1993) have been fully considered and are persuasive. The rejection of claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by Cook *et al* has been withdrawn in light of amended claim 1 in the reply filed on September 14, 2009.

5. Applicant's arguments, see pp19, filed on September 14, 2009, with respect to the rejection under 35 U.S.C. 102(b) as being anticipated by Rehmer *et al* (US 5073611) have been fully considered and are persuasive. The rejection of claims 1 and 2 under 35 U.S.C. 102(b) as being anticipated by Rehmer *et al* has been withdrawn in light of amended claim 1 in the reply filed on September 14, 2009.

Claim Objections

6. Claims 3 and 9 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 3, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 1, 3, 9 and 10, it is unclear whether the dashes on the left side of A_1 and the right side of NH in the compound or formula (Ie) are intended to describe a bond or a methyl group.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

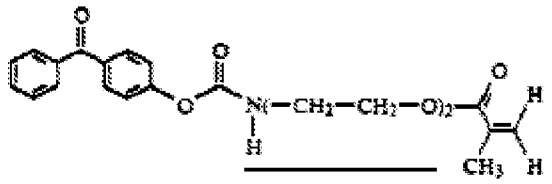
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1, 3 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rehmer *et al* (US 5073611).

Claim 1 is directed to a resin comprising a polymer obtained from methacrylic monomer comprising a hydrophilic spacer represented by formula (Ie). The phrase "wherein a ligand is optionally immobilized on the resin" is not a positive recitation and thus the ligand is not considered as a component of the claimed resin. The product by process language "obtained by polymerizing a starting material monomer, wherein the monomer incorporates a hydrophilic spacer" would provide a polymer comprising a hydrophilic spacer.

Rehmer *et al* disclose resin comprising methacrylic monomer comprising a hydrophilic spacer (column 12, lines 55-65; claim 2 and column 10, lines 48-51). Rehmer *et al* disclose polymeric resins prepared from polymerization of monomers having the following structure:

Compound B 1 =



The above structure comprises (meth)acrylic group having a hydrophilic spacer wherein the partial structure of the hydrophilic spacer (as shown by underline) is -O-

CH_2-CH_2-O-CH_2-CH_2-NH- , which is a chain homolog of the partial structure (Ie) of instant claims 3, 9 and 10 when A_1=O and r=1-10.

The only difference between the partial structure of the hydrophilic spacer of instant claims 1, 3 and 9-10 and the referenced spacer lie in the selection of ethylene oxide repeating group (by one repeating group when r=1). However, homologs (compounds differing regularly by the successive addition of the same repeating group) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977).

Therefore, given the above fact that the two crosslinkers are chain homologs and are very similar (differ by only the number of repeating groups), one would obviously expect them to show similar properties as a crosslinker. The claimed spacers are so closely related structurally to the homologous compounds of the reference as to be structurally obvious therefore in the absence of any unobviousness or unexpected properties (MPEP § 2144.08). Applicants should note that a generic teaching is grounds for 35 USC § 103 (a) obviousness type of rejection. In looking at the instant claimed compounds as a whole, the claimed compounds would have been suggested to one skilled in the art unless unobvious or unexpected results can be shown.

With regard to claims 11-12, the hydrophilic spacer and the acryloyl monomer having the hydrophilic spacer (claim 12) would provide a methacryloyl resin having a hydrophilic spacer comprising -O-CH_2-CH_2-O-CH_2-CH_2-NH- that are as described

above, would be a structural homolog of the resin of instant application differing only by the ethylene oxide repeat group.

.Response to argument

11. Applicant's arguments filed 9/14/09 have been fully considered, and are persuasive to overcome the rejections under 35 USC 112 second paragraph and the rejections under 35 USC 102. However, Applicants amendment necessitated new ground of rejections under 35 USC 112 second paragraph and 35 USC 103, which are described in this office action.

Applicants argued that the additional –CH2CH2O- unit in the claimed hydrophilic spacer is not suggested in Rehmer and Rehmer does not mention use of the compound B1 in affinity chromatography where the claimed hydrophilic spacer is used as part of the an affinity resin. Applicants further argued that spacer lengths in hydrophilic spacer such as (Ie) that differ in the length of the repeating groups are of significance for the intended use.

Applicants' arguments have been fully considered are not found persuasive for the reasons as set forth in the 103 rejection as described above. With regard to the intended use (i.e. "an affinity resin"), Applicant is reminded that a recitation of the intended use of the claimed invention, must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.

See In re Casey, 152 USPQ 235 (CCPA 1967) and In re Otto, 136 USPQ 458, 459 (CCPA 1963).

With regard to applicants' argument for significance of the repeating group, the Examiner maintains that homologs (compounds differing regularly by the successive addition of the same repeating group) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977). Since the two crosslinkers are chain homologs, one would obviously expect them to show similar properties as a crosslinker in the absence of any unobviousness or unexpected properties (MPEP § 2144.08) and Applicants failed to establish unexpected properties due to change in the number of repeating group (e.g. ethylene oxide repeats) in the polymer obtained from mathacrylic acid monomer having ethylene oxide linker (e.g. unexpected property in the polymer having two ethylene oxide repeat versus three ethylene oxide repeat).

Conclusion

12. No claims are allowed.

13. Applicants' amendment necessitated new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If Applicants should amend the claims, a complete and responsive reply will clearly identify where support can be found in the disclosure for each amendment. Applicant should point to the page and line numbers of the application corresponding to each amendment, and provide any statements that might help to identify support for the claimed invention (e.g., if the amendment is not supported in ipsis verbis, clarification on the record may be helpful). Should Applicants present new claims, Applicants should clearly identify where support can be found in the disclosure.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shafiqul Haq whose telephone number is 571-272-6103. The examiner can normally be reached on 7:30AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark L. Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Shafiqul Haq/
Primary Examiner, Art Unit 1641